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ABSTRACT

The Fry Readability Formula was employed to determine the reading grade levels of the eight most popular college U.S. history survey textbooks and the ten most popular Western civilization textbooks. It was discovered that the Fry readability technique could not produce consistently close findings on any single college history textbook. Indeed, every textbook exhibited a wide range of readability grade levels. Three passages were chosen from each book and the results were plotted on the Fry Readability Graph to determine the text's approximate grade level. Each U.S. history text was examined with a minimum of two readability checks, and each Western civilization text was examined by four readability checks. The findings produced by this methodology were presented in two tables. It appears that the Fry readability technique can provide only a very rough estimate of the reading grade level of college history textbooks. Although such estimates may be considered when selecting a survey history text, other factors should govern the choice of a textbook. The Fry technique and other formulas neglect vital aspects of student comprehension and important features of college-level history textbooks. No formula can guarantee that a textbook with an 11th grade readability level will be better understood than one with a 16th grade readability level. The books used in this study are listed and a 6-item note page is included. (GEA)

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APPLYING THE FRY GRADE LEVEL FORMULA TO COLLEGE HISTORY TEXTS

by James A. Stevenson

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Applying the Fry Grade Level Formula to College History Texts

Developed by Edward Fry, the Fry readability formula[1] is not only stated to have the ability to predict reading grade levels to "'probably within a grade level,'"[2] but it is "quite highly" "correlated" with other readability techniques such as Dale-Chall, SRA, Flesch, Spache, and Botel (Botel had the lowest positive correlation to Fry, a .78).[3] The Fry technique has the additional advantage of being simpler and quicker to use than most other readability formulas. In this study, it was employed to determine the reading grade levels of the eight most popular U.S. history survey textbooks[4] and the reading grade levels of the ten most popular Western civilization textbooks.[5]

In the examination of U.S. history texts, the Fry readability technique was used to produce two separate grade level findings on each text. However, an examination of three out of eight of the books revealed such disparate findings that a third check was conducted on three of the texts. These textbooks were by George Tindall (readability grade level findings of 13.5, 15, and 13.5), Richard Current (readability grade level findings of 13, 14.6, and 15.9), and Thomas Bailey (readability grade level findings of 13.5, 15.5, and 15.9). Such disparities were so troubling that the number of checks on the Western civilization textbooks were increased to four. This new procedure led to the discovery that the Fry readability technique could not produce consistently close findings on any single college history textbook. Indeed, every textbook exhibited a wide range of readability grade levels.

To obtain the results in this study, the following data-collecting and Fry technique/evaluation procedures were used. First, three passages from each book were chosen. Each selection was at least 100 words in length.[6] Second, the number of words in each selection was counted. A word was identified as a symbol or as a group of symbols with a space on either side (Bob, ERA, 1987, and & each equal one word). Third, the number of sentences in each selection was counted. Finally, the number of syllables in each selection was counted. When syllables for numerals and initializations were counted, each symbol stood for one syllable (1987 equals four syllables, ERA equals three syllables, and & equals one syllable). After the figures in each category (words, sentences, and syllables) were added within their separate categories, the sums of syllables and sentences were multiplied by 100 and divided by the sum of the number of words contained in the three selected passages. This may be pictured as:

$$\frac{100\ (Syl)}{W} = Result \qquad \frac{100\ (Sen)}{W} = Result$$

The results obtained by this procedure were plotted on the Fry Readability Graph, and the approximate grade level of the text was determined.

The selected passages were taken from the first third, second third, and final third of each text. Each selection was taken from whole paragraph passages that contained a minimum of dates (usually none or only one), and no numbers. Each U.S. history text was examined with a minimum of two readability checks, and each Western civilization text was examined by four readability checks. The U.S. history and Western civilization books which were examined were: Bailey, Thomas A. and Kennedy, David M. The American Pageant: A History of the Republic. 8th

ed., 2 vols. Lexington, MA: D.C. Heath, 1987; Conlin, Joseph R. The American Past: A Survey of American History. 2nd ed., 2 vols. New York: Harcourt Brace Jovanovich, 1984; Current, Richard N., et al. AmericanHistory: A Survey. 7th ed., 2 vols. New York: Alfred A. Kropf, 1987; Divine, Robert A., et al. America: Past and Present. 2nd ed., 2 vols. Glenview, IL: Scott-Foresman, 1987; Garraty, John A. and McCaughey, Robert A. The American Nation: A History of the United States. 6th ed., 2 vols. New York: Harper and Row, 1987; Nash, Gary B., et al. The American People: Creating a Nation and a Society. 1st ed., 2 vols. New York: Harper and Row, 1986; Norton, Mary Beth, et al. A People and A Nation: A History of the United States. 2nd ed., 2 vols. Boston, MA: Houghton Mifflin, 1986; Tindall, George Brown. America: A Narrative History. 1st ed., 1 vol. New York: W.W. Norton, 1984; Brinton, Crane, et al. A History of Civilization. 6th ed., 2 vols. New Jersey: Prentice-Hall, 1984; Burns, Edward McNall, et al. Western Civilizations: Their History and Their Culture. 10th ed., 2 vols. New York: W.W. Norton, 1984; Chambers, Mortimer, et al. The Western Experience. 4th ed., 2 vols. New York: Alfred A. Knopf, 1987; Goff, Richard D. et al. A Survey of Western Civilization. 1st ed., 2 vols. New York: West, 1987; Harrison, John B., et al. A Short History of Western Civilization. 6th ed., 2 vols. New York: Alfred A. Knopf, 1985; Kagan, Donald, et al. The Western Heritage. 3rd ed., 3 vols. New York: Macmillan, 1987; McKay, John P., et al. A History of Western Society. 3rd ed., 2 vols, New Jersey: Houghton Mifflin, 1987; Palmer, R.R. and Colton, Joel. A History of the Modern World. 6th ed. New York: Alfred A. Knopf, 1984; Strayer, Joseph R. and Gatzke, Hans W. The Mainstream of Civilization. 4th ed., 2 vols. New York: Harcourt Brace Jovanovich,

1984; Wallbank, Walter T., et al. Civilization Past and Present. 6th ed., 2 vols. Glenview, IL: Scott, Foresman, 1987.

The findings produced by the methodology of the two readability checks on each U.S. history text are shown in TABLE I. Since the initial two checks of the Tindall, Current, and Bailey texts produced disparate findings, it was the third check which created the close correlation shown in TABLE I

TABLE I

FRY READABILITY LEVELS OF U.S. HISTORY TEXTS

Grade Level			Textbooks	
Low	High	Disparity	Author	Title
15.5	15.9	13.5	Bailey,	The American Pageant
12.3	12.5		Conlin,	The American Past
14.6	15.9	13.0	Current	American History
16.3	16.5		Divine,	America
16.9	17.0		Garraty	The American Nation
12.0	12.4		Nash,	The American People
16.0	16.5		Norton,	A People and A Nation
13.5	13.5	15.0	Tindall,	America

In the examination of Western civilization textbooks, it became evident that the disparities discovered in Tindall, Current, and Bailey were not aberrations. The Western civilization textbooks, therefore, underwent four Fry readability checks. The results of this examination called into question the validity of using the Fry readability technique to determine the reading grade level of any college history textbook. After all, instead of confirming Fry's claim of the technique's accuracy

to "'probably within a grade level,'" this study revealed that the Fry technique produces grade level findings that are as much as seven years apart on the same textbook.

The disparate findings that were discovered in each of the four examinations conducted on the ten Western civilization textbooks are illustrated in TABLE II (See I-IV on each text in TABLE II.). The number of words, sentences, and syllables that were used to determine the grade level findings are shown on TABLE II. Such data indicates that there was no pattern of a higher or a lower number of words, sentences or syllables that produced either a higher or lower grade level finding.

TABLE II

FRY READABILITY LEVELS OF WESTERN CIVILIZATION TEXTS

Author	Grade Levels		No. Words	No. Sent.	No.Syl.
Brinton	I.	14	391	16	651
	II.	13	385	17	631
	III.	16.5	336	13	598
	IV.	14.5	360	16	611
Burns	I.	14.9	351	15	601
	II.	15.3	382	15	658
	III.	13.3	366	15	598
	IV.	13.6	335	11	571
Chambers	I.	17.9	350	13	639
	II.	15.4	320	15	552
	III.	14.5	346	18	594
	IV.	17.2	390	15	702
Goff	I.	16.8	372	16	666
	II.	11.5	388	21	621
	III.	18.5	344	17	633
	IV.	16.4	354	17	626
Harrison	I.	16.3	386	21	684
	II.	14.3	385	19	655
	III.	13.6	398	20	669
	IV.	16.4	416	20	739
Kagan	I.	12.2	391	21	647
	II.	16.5	377	14	667
	III.	11.6	368	16	581
	IV.	19+	325	16	604
McKay	I.	17	360	17	647
	II.	18	379	17	692
	III.	15.9	400	20	703
	IV.	14.5	377	19	645
Palmer	I.	12.5	396	19	647
	II.	12.5	437	19	701
	III.	13.3	368	18	611
	IV.	16.5	376	20	671
Strayer	I.	13.2	400	21	666
	II.	11.6	389	19	622
	III.	13.3	356	15	584
	IV.	16.2	388	17	683
Wallbank	I.	17	359	20	654
	II.	16	398	15	697
	III.	14	352	18	596
	IV.	19+	335	19	629

As these results demonstrate, it appears that the Fry readability technique can provide only a very rough estimate of the reading grade level of college history textbooks. Although such estimates may be considered when selecting a survey history text, other factors should govern the choice of a history textbook.

In fact, the accuracy and the thoroughness of a text has to be the prime consideration in any textbook adoption decision. Then too, student reading comprehension is affected by the author's syntax, wit, and perspective. The Fry technique and other readability formulas which rely on mathematical computations and numerical estimates of textbook readability are not entirely useless, but they neglect vital aspects of student comprehension and important features of college level history textbooks. Most college freshmen will be able to comprehend "America" (four syllables) and "industrialization" (seven syllables), but how many can comprehend "impel" (two syllables) or "skewed" (one syllable) or "egalitarian" (six syllables)? Thus, neither Fry's readability technique nor any of those readability formulas which correlate positively with his formula can guarantee that a textbook with an eleventh grade readability level will be better understood than one with a sixteenth grade readability level. Besides, if the readability level of any particular college history textbook can be only roughly estimated and if every history instructor has different instructional needs, it is clear that virtually all of the texts listed in this study are acceptable choices for U.S. and Western civilization history courses.

Notes

[1]Fry, Edward. "A Readability Formula That Saves Time." Journal of Reading 11 (April 1968): 513-516, 575-578. The Fry graph used in this study was extended to grade 17+. In the past, the Rutgers University Reading Center, New Brunswick, New Jersey 08904, has supplied some of these graphs to various people and institutions. Fry included one which covered grades 1-12 in his article.

[2]Ibid., p. 514.

[3]Ibid., p. 576.

[4]Letter from Mr. Dan Ragsdale to James A. Stevenson, March 24, 1987. Mr. Ragsdale represented the firms of Random House and Alfred A. Knopf Inc. Based on marketing information supplied by his editoral department, he supplied me with a list of the top eight U.S. history survey textbooks.

[5]Letter from Mr. Clark G. Baxter to James A. Stevenson, August 27, 1987. Mr. Baxter is an editor at West Educational Publishing House, and he supplied me with a list of the "top selling" Western civilization history textbooks.

[6]Rather than calculate the readability levels on the basis of a strict 100 word count, it was deemed better to select whole paragraph passages that were as close to 100 words in length as possible. However, in order to check the findings of this procedure against the findings produced by adhering to a 100 word selection procedure, the Wallbank and Strayer texts were examined with both procedures, and each procedure produced similar disparities. For example, the Wallbank calculations based on 100 words produced respective grade level findings of 17.1 and 19+; Wallbank calculations based on whole paragraph passages of 359 words and 335 words produced respective grade level findings of 17 and 19; Strayer calculations based on 100 words produced respective grade level findings of 11.5 and 14.3; Strayer calculations based on whole paragraph passages of 389 words and 388 words produced respective grade level findings of 11.6 and 16.2.